

**Article 12. Waste Piles****§66264.250. Applicability.**

(a) The regulations in this article apply to owners and operators of facilities that store or treat hazardous waste in piles, except as section 66264.1 provides otherwise.

(b) The regulations in this article do not apply to owners or operators of waste piles that are part of a permitted facility and are closed with wastes left in place. Such waste piles are subject to regulation under article 14 of this chapter (Landfills).

(c) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under section 66264.251 or under article 6 of this chapter, provided that:

- (1) liquids or materials containing free liquids are not placed in the pile;
- (2) the pile is protected from surface water run-on by the structure or in some other manner;
- (3) the pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and
- (4) the pile will not generate leachate through decomposition or other reactions.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.250.

**HISTORY**

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

**§66264.251. Design and Operating Requirements.**

(a) A waste pile (except for an existing portion of a waste pile) shall have:

(1) a liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner shall be:

(A) constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(B) placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(C) installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

(2) a leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The Department shall specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system shall be:

(A) constructed of materials that are:

1. chemically resistant to the waste managed in the pile and the leachate expected to be generated; and
2. of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the pile; and

(B) designed and operated to function without clogging through the scheduled closure of the waste pile.

(b) If the liner is constructed of material that allows waste to migrate into the liner, it shall be designed and constructed in accordance with provisions of section 66264.221(d).

(c) The owner or operator of each new waste pile unit on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 shall install two or more liners and a leachate collection and removal system above and between such liners. The requirements of this subsection shall not apply to waste pile units receiving only non-RCRA hazardous waste until February 18, 1996. "Construction commences" is as defined in section 66260.10 under "existing facility".

(1)(A) The liner system shall include:

1. A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

2. A composite bottom liner, consisting of at least two components. The upper component shall be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component shall be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component shall be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.

(B) The liners shall comply with subsections (a)(1)(A), (B), and (C) of this section.

(2) The leachate collection and removal system immediately above the top liner shall be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and post-closure care period. The Department will specify design and operating conditions in the permit to ensure that the

leachate depth over the liner does not exceed 1 foot (30 cm). The leachate collection and removal system shall comply with subsections (c)(3)(C) and (D) of this section.

(3) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system shall be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this subsection are satisfied by installation of a system that is, at a minimum:

(A) Constructed with a bottom slope of one percent or more;

(B) Constructed of granular drainage materials with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 1 foot (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more. In cases where the leak detection system is composed of coarse granular material, there shall be a suitable interface (e.g., geotextile) between the leak detection system and any flexible membrane liner, as needed to prevent the coarse grains from causing a puncture in the flexible membrane liner under the high stress conditions caused by the overlying waste;

(C) Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;

(D) Designed and operated to minimize clogging during the active life and post-closure care period; and

(E) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit shall have its own sump(s). The design of each sump and removal system shall provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(4) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(5) The liner system shall be designed, constructed and operated to ensure that leak detection system shall be a minimum of 5 feet above the highest anticipated elevation of groundwater.

(d) The collection and removal system shall conform to section 66264.221(e).

(e) The owner or operator will be exempted from the requirements of subsection (a) of this section, if the Department finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Department will consider:

(1) the nature and quantity of the wastes;

(2) the proposed alternate design and operation;

(3) the hydrogeologic setting of the facility, including alternative capacity and thickness of the liners and soils present between the pile and ground water or surface water;

(4) all other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water; and

(5) the potential for lateral migration of hazardous constituents which could present a threat to public health or the environment.

(f) The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the portion of the pile during peak discharge from at least a 25-year storm.

(g) The owner or operator shall design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(h) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems shall be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(i) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal.

(j) The Department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(k) If the Department determines that monitoring in the normally unsaturated zone as required pursuant to article 6 of this chapter is impracticable, the Department shall require the following when a waste pile is established:

(1) the pile shall be underlain by two liners which are designed and constructed in a manner that prevents the migration of liquids into or out of the space between the liners. Both liners shall meet all the specifications of subsection (a)(1) of this section;

(2) a leak detection system shall be designed, constructed, maintained and operated between the liners to detect any migration of liquids into the space between the liners;

(3) the pile shall have a leachate collection and removal system above the top liner that is designed, constructed, maintained and operated in accordance with subsection (a)(2) of this section.

(l) The Department may approve alternative design or operating practices to those specified in subsection (c) of this section if the owner or operator demonstrates to the Department that such design and operating practices, together with location characteristics:

(1) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in subsection (c) of this section; and

(2) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

(m) Subsection (c) of this section does not apply to monofills that are granted a waiver by the Department in

accordance with section 66264.221(g).

(n) The owner or operator of any replacement waste pile unit is exempt from subsection (c) of this section if:

- (1) The existing unit was constructed in compliance with the design standards of 42 USC section 6924(o)(1)(A)(i) and 42 USC section 6924(o)(5); and
- (2) There is reason to believe that the liner is functioning as designed.

NOTE: Authority cited: Sections 25150 and 25159, Health and Safety Code; and Governor's Reorganization Plan Number 1 of 1991. Reference: Sections 25159 and 25159.5, Health and Safety Code; and 40 CFR Section 264.251.

#### HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).
2. Repealer of subsections (c) and (l) -(l)(2), new subsections (c)-(c)(5) and (l)-(n)(2) and amendment of Note filed 7-19-95; operative 8-18-95 (Register 95, No. 29).
3. Change without regulatory effect amending subsections (c), (c)(2), (d) and (n)(1) filed 6-30-97 pursuant to section 100, title 1, California Code of Regulations (Register 97, No. 27).
4. Change without regulatory effect amending subsections (c) and (c)(5) filed 10-21-97 pursuant to section 100, title 1, California Code of Regulations (Register 97, No. 43).

#### **§66264.252. Action Leakage Rate.**

(a) The Department shall approve an action leakage rate for waste pile units subject to section 66264.251(c) or (l). The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid pressure head on the bottom liner exceeding 1 foot (30.5 cm) at any given portion of the liner. The action leakage rate shall include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate shall consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(b) To determine if the action leakage rate has been exceeded, the owner or operator shall convert the weekly flow rate from the monitoring data obtained under section 66264.254(c), to an average daily flow rate (gallons per acre per day) for each sump. Unless the Department approves a different calculation, the average daily flow rate for each sump shall be calculated weekly during the active life and closure period.

NOTE: Authority cited: Sections 25150 and 25159, Health and Safety Code; and Governor's Reorganization Plan Number 1 of 1991. Reference: Sections 25159 and 25159.5, Health and Safety Code; and 40 CFR Section 264.252.

#### HISTORY

1. New section filed 7-19-95; operative 8-18-95 (Register 95, No. 29).
2. Change without regulatory effect amending subsection (a) filed 6-30-97 pursuant to section 100, title 1, California Code of Regulations (Register 97, No. 27).

#### **§66264.253. Response Actions.**

(a) The owner or operator of waste pile units subject to section 66264.251(c) or (l) shall have an approved response action plan before receipt of waste. The response action plan shall set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan shall describe the actions specified in subsection (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator shall:

- (1) Notify the Department in writing of the exceedance within 7 days of the determination;
- (2) Submit a preliminary written assessment to the Department within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
- (3) Determine to the extent practicable the location, size, and cause of any leak;
- (4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
- (5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
- (6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Department the results of the analyses specified in subsections (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator shall submit to the Department a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in subsections (b)(3), (4), and (5) of this section, the owner or operator shall:

- (1)(A) Assess the source of liquids and amounts of liquids by source,
- (B) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
- (C) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- (2) Document why such assessments are not needed.

NOTE: Authority cited: Sections 25150 and 25159, Health and Safety Code; and Governor's Reorganization Plan Number 1 of 1991. Reference: Sections 25159 and 25159.5, Health and Safety Code; and 40 CFR Section 264.253.

#### HISTORY

1. New section filed 7-19-95; operative 8-18-95 (Register 95, No. 29).
2. Change without regulatory effect amending subsection (a) filed 6-30-97 pursuant to section 100, title 1, California Code of Regulations (Register 97, No. 27).

#### **§66264.254. Monitoring and Inspection.**

(a) During construction or installation, liners (except as exempted from section 66264.251(a)) and cover systems (e.g., membranes, sheets, or coatings) shall be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

- (1) synthetic liners and covers shall be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and
- (2) soil-based and admixed liners and covers shall be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a waste pile is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

- (1) deterioration, malfunctions, or improper operation of run-on and run-off control systems;
- (2) proper functioning of wind dispersal control systems, where present; and
- (3) the presence of liquids in leak detection systems, where installed to comply with section 66264.251(k);
- (4) the presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(c) An owner or operator required to have a leak detection system under section 66264.251(c) shall record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

NOTE: Authority cited: Sections 25150 and 25159, Health and Safety Code; and Governor's Reorganization Plan Number 1 of 1991. Reference: Sections 25159 and 25159.5, Health and Safety Code.

#### HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).
2. New subsection (c) and amendment of Note filed 7-19-95; operative 8-18-95 (Register 95, No. 29).

#### **§66264.256. Special Requirements for Ignitable or Reactive Waste.**

Ignitable or reactive waste shall not be placed in a waste pile unless: the waste and waste pile satisfy all applicable requirements of chapter 18 of this division, and:

- (a) the waste is treated, rendered, or mixed before or immediately after placement in the pile so that:
  - (1) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under sections 66261.21 or 66261.23 of this chapter; and
  - (2) section 66264.17(b) is complied with; or
- (b) the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.256.

#### HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

#### **§66264.257. Special Requirements for Incompatible Wastes.**

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) shall not be placed in the same pile, unless section 66264.17(b) is complied with.

(b) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, open tanks, or surface impoundments shall be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

(c) Hazardous waste shall not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with section 66264.17(b).

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.257.

#### HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

#### **§66264.258. Closure and Post-Closure Care.**

(a) At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated

with waste and leachate, and manage them as hazardous waste unless section 66261.3(d) applies.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subsection (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (section 66264.310).

(c)(1) The owner or operator of a waste pile shall:

(A) include in the closure plan for the pile under section 66264.112 both a plan for complying with subsection (a) of this section and a contingent plan for complying with subsection (b) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(B) prepare a contingent post-closure plan under section 66264.118 for complying with subsection (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under sections 66264.142 and 66264.144 for closure and post-closure care of a pile subject to this subsection shall include the cost of complying with the contingent closure plan and the contingent post-closure plan.

NOTE: Authority cited: Sections 208, 25150, 25159, Health and Safety Code. Reference: Sections 25150, 25159, 25159.5 and 25245, Health and Safety Code; 40 CFR Section 264.258.

#### HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).

#### **§66264.259. Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027.**

(a) Hazardous Wastes F020, F021, F022, F023, F026, and F027 shall not be placed in waste piles unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the Department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. The factors to be considered are:

(1) the volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

(2) the attenuative properties of underlying and surrounding soils or other materials;

(3) the mobilizing properties of other materials co-disposed with these wastes; and

(4) the effectiveness of additional treatment, design, or monitoring techniques.

(b) The Department shall impose additional design, operating, and monitoring requirements for piles managing hazardous wastes F020, F021, F022, F023, F026, and, F027 if necessary to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code. Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.259.

#### HISTORY

1. New section filed 5-24-91; operative 7-1-91 (Register 91, No. 22).